AEMC®
Introduces Our Newest PowerPad®
Model 8335 Three-Phase Power Quality Analyzer

NEW!

With Direct Measurement Of 4 Voltage And 4 Current Inputs Including Neutral Voltage And Current!

Captures And Records Trend, Transients, Events and Waveforms Simultaneously, With 2GB Of Memory For Data Storage!

TRANSCAT®

Visit us at Transcat.com!

35 Vantage Point Drive // Rochester, NY 14624 // Call 1.800.800.5001

AEMC® INSTRUMENTS

Power Analyzer

PowerPad Model 8335

DESCRIPTION

The PowerPad® Model 8335 is a three-phase power quality analyzer that is easy-to-use, compact and shock-resistant. It is intended for technicians and engineers to measure and carry out diagnostic work and power quality work on one, two or three phase low voltage networks.

The PowerPad®'s 2GB of memory is conveniently partitioned to let you store four different types of data, synchronized or independent of each other. You can store up to 50 screen snapshots, up to 210 captured transients that contain four cycles for each active input, and 10000 alarm events from up to 40 different parameters. You can also record trend data for days, weeks or even months.

Six direct access function buttons quickly let you see:

Waveforms – Display Volts, Amps, THD and Crest Factor by phase or for all phases. You can display all the voltage inputs on one screen, phase-to-phase or phase-to-neutral. Real-time phasor diagrams can be displayed for volts and amps, also by phase or for all phases including phase unbalance.

Harmonics – Display Harmonics out to the 50th for Volts, Amps and VA. Individual Harmonics are displayed as a percentage and value for Volts, Amps and VA. Harmonic direction and sequencing can also be displayed.

Transients – Set, capture and display transients. You select the threshold and the number of transients to capture. The PowerPad® then captures four waveforms for each transient; the triggering waveform as well as one pre-triggered and two post-triggered waveforms. As many as 210 transients, each consisting of 4 waveforms per channel for up to 8 channels, can be captured.

Trend Recording – Record and display trend data at user selectable sample rates from 1/sec to 1/15 minutes and user programmable recording periods into 2GB of memory

FEATURES

- Measurement of TRMS voltages up to 1000Vrms AC/DC for two, three, four or five-wire systems
- Measurement of TRMS currents up to 6500Arms (sensor dependant)
- Measurement of DC current up to 1400ADC (with MR193 probe)
- Automatic probe detection and calibration
- Frequency measurement (40 to 69Hz systems)
- Direct measurement of neutral current for WYE configurations
- Record and display trend data as fast as once per second for one month for up to 25 variables.
- Energy assessments
- Transient detection on all V and I inputs

AEMC® INSTRUMENTS

- Inrush current
- Calculation of Crest Factors for current and voltage
- Calculation of the K Factor for transformers
- Calculation of short-term flicker for voltage
- Calculation of the phase unbalance for voltage and current (3 phase only)
- Measurement of harmonic angles and rates (referenced to the fundamental or RMS value) for voltage, current or power, up to 50th harmonic
- Display of harmonic sequencing and direction
- Calculation of overall harmonic distortion factors
- Real time display of Phasor diagrams including values and phase angles
- Monitoring of the average value of any parameter, calculated over a period running from 1 sec to 2 hrs
- Measurement of active, reactive and apparent power per phase and their respective sum total
- Calculation of power factor, displacement power factor and tangent factor
- Total power from a point in time, chosen by the operator
- Recording, time stamping and characterization of disturbance (swells, sags and interruptions, exceedance of power and harmonic thresholds)
- Detection of transients and recording of associated waveforms.
- Color coded input tags to identify voltage and current inputs to local standards.
- 2GB internal memory
- DataView software included for downloading measurements, storage, and analysis and report generation.

APPLICATIONS

- Verification of power distribution circuits
- Measurement and recording of power system quality (kW, VA, VAR)
- Energy metering (kVAh, VARh, kWh)
- In plant troubleshooting of power distribution panels and individual machinery
- Monitor pad mount transformers
- Determine harmonic problems originating from source or load
- Monitor phase unbalances
- Determine transformer K-Factor

ORDERING INFORMATION

PowerPad® Model 8335 ..... Cat. #2136.20

Includes five 10 ft black voltage leads, five black alligator clips, twelve color-coded rings, USB cable, NiMH battery, 110/240V power adapter with US power cord, DataView® software, large classic tool bag, soft carrying pouch and user manual.

PowerPad® Model 8335 w/MN93-BK ..... Cat. #2136.21

Includes the PowerPad® Model 8335, four MN93-BK (240A) probes, five 10 ft black voltage leads, five black alligator clips, twelve color-coded rings, USB cable, NiMH battery, 110/240V power adapter with US power cord, DataView® software, large classic tool bag, soft carrying pouch and user manual.

PowerPad® Model 8335 w/SR193-BK ..... Cat. #2136.22

Includes the PowerPad® Model 8335, four SR193-BK (1200A) probes, five 10 ft black voltage leads, five black alligator clips, twelve color-coded rings, USB cable, NiMH battery, 110/240V power adapter with US power cord, DataView® software, large classic tool bag, soft carrying pouch and user manual.

PowerPad® Model 8335 w/24" AmpFlex® 193-24-BK ..... Cat. #2136.23

Includes the PowerPad® Model 8335, four 24" AmpFlex® 193-24-BK (6500A) sensors, five 10 ft black voltage leads, five black alligator clips, twelve color-coded rings, USB cable, NiMH battery, 110/240V power adapter with US power cord, DataView® software, large classic tool bag, soft carrying pouch and user manual.

PowerPad® Model 8335 w/36" AmpFlex® 193-36-BK ..... Cat. #2136.24

Includes the PowerPad® Model 8335, four 36" AmpFlex® 193-36-BK (6500A) sensors, five 10 ft black voltage leads, five black alligator clips, twelve color-coded rings, USB cable, NiMH battery, 110/240V power adapter with US power cord, DataView® software, large classic tool bag, soft carrying pouch and user manual.

PowerPad® Model 8335 w/MR193-BK ..... Cat. #2136.25

Includes the PowerPad® Model 8335, four MR193-BK (1000A$_{AC}$/1400A$_{DC}$) probes, five 10 ft black voltage leads, five black alligator clips, twelve color-coded rings, USB cable, NiMH battery, 110/240V power adapter with US power cord, DataView® software, large classic tool bag, soft carrying pouch and user manual.

PowerPad® Model 8335 w/MN193-BK ..... Cat. #2136.26

Includes the PowerPad® Model 8335, four MN193-BK (6A/120A) probes, five 10 ft black voltage leads, five black alligator clips, twelve color-coded rings, USB cable, NiMH battery, 110/240V power adapter with US power cord, DataView® software, large classic tool bag, soft carrying pouch and user manual.

Accessories and Replacement Parts

Extra Large Classic Tool Bag ..... **Cat. #2133.73**

Replacement - Soft Carrying Pouch ..... **Cat. #2140.15**

Replacement - Lead Set with Clips..... **Cat. #2140.16**

5A Adapter Box (consult factory) ..... **Cat. #2140.17**

Replacement - Battery 9.6V NiMH..... **Cat. #2140.19**

AC Current Probe Model MR193-BK (1000AAC/1400ADC) ..... **Cat. #2140.28**

AC Current Probe Model MN93-BK (200A)..... **Cat. #2140.32**

AC Current Probe Model SR193-BK (1200A)..... **Cat. #2140.33**

AmpFlex® Sensor 24**"** Model 193-24-BK (6500A)..... **Cat. #2140.34**

AmpFlex® Sensor 36**"** Model 193-36-BK (6500A)..... **Cat. #2140.35**

AC Current Probe Model MN193-BK (5A/100A) ..... **Cat. #2140.36**

Replacement - Set of 12 Color-coded Rings ..... **Cat. #2140.45**

Replacement - 6 ft USB cable..... **Cat. #2140.46**

Replacement - 110/240V Power Adapter with US Power Cord..... **Cat. #5000.19**

SPECIFICATIONS

ELECTRICAL			
Sampling Frequency	256 samples per cycle		
Data Storage	2GB SD Card		
Voltage (TRMS)	Phase-to-Phase: 1000V; Phase-to-Neutral: 1000V		
Current (TRMS)	MN Clamp: 0 to 6A/120A or 0 to 240A MR Clamp: 0 to 1000AAC, 0 to 1400ADC AmpFlex®: 0 to 6500A[1]	SR Clamp: 0 to 1200A MiniFlex™: 0.1 to 1000A	
MEASUREMENT	**RANGE**	**RESOLUTION**	**ACCURACY**
Single-Phase RMS Voltages	15 to 1000V	0.1V	±0.5% ± 2cts
Phase-to-Phase RMS Voltages	15 to 1000V	0.1V	±0.5% ± 2cts
DC Voltage Component	15 to 1000V	0.1V	±1% ± 5cts
Single-Phase Peak Voltages	15 to 1414V	0.1V < 1000V 1V > 1000V	±(1% + 1V)
Phase-to-Phase Peak Voltages	15 to 1414V	0.1V < 1000V 1V > 1000V	±(1% + 1V)
Frequency (Hz)	40 to 69Hz	0.01Hz	±0.01Hz
Current Probes (Arms) MN Probe SR Probe AmpFlex® Sensor	 0 to 240A 0 to 1200A 10 to 6500A	 0.1A 0.1A < 1000V; 1A > 1000A 0.1A < 1000V; 1A > 1000A	 ±(0.5% + 2cts) ±(0.5% + 2cts); ±(0.5% + 1ct) ±(0.5% + 1A)
Active (Real) Power (kW)	0 to 9999kW	4 digits (10,000ct)	±1% ± 1ct @ PF ≥0.8
Reactive Power (kVAR)	0 to 9999kVAR	4 digits (10,000ct)	±1% ± 1ct @ PF ≤0.8
Apparent Power (kVA)	0 to 9999kVA	4 digits (10,000ct)	±1% ± 1ct
Power Factor (PF & DPF)	-1.000 to 1.000	0.001	±(1.5% + 10cts)
Active Energy (kWh)	0 to 9999MWh	4 digits (10,000ct)	±1% ± 1ct @ PF ≥0.8
Reactive Energy (kVARh)	0 to 9999MVARh	4 digits (10,000ct)	±1% ± 1ct @ PF ≤0.8
Apparent Energy (kVAh)	0 to 9999MVAh	4 digits (10,000ct)	±1% ± 1ct
Unbalance (V & A)	0 to 100%	0.1%	±1% ± 1ct
Phase Angle (V–A, A–A, V–V)	-179° to +180°	1°	±2° ± 1ct
Harmonics (1st to 50th) **F = 40 to 69Hz (V ≥ 50V, A > nom/100)**	0 to 999%	0.1%	±1% + 5cts
Total Harmonic Distortion (V & A)	0 to 999%	0.1%	±1% + 5cts
K-factor (Akf)	1 to 99.99	0.01	±5% ± 1ct
Flicker (Pst)	0.00 to 9.99	0.01	–
Power Source	9.6V NiMH rechargeable battery pack External AC supply: 110/230VAC ±10% (50/60Hz)		
Battery Life	≥8 hrs with display on; ≥35 hrs with display off (record mode)		
MECHANICAL			
Dimensions	9.8 x 7.8 x 2.6" (250 x 200 x 67mm)		
Weight	4.3 lbs (1.95kg)		
DISPLAY			
Display Type	1/4 VGA (320 x 240) color LCD		
ENVIRONMENTAL			
Operating Temperature	32° to 122°F (0° to 50°C)		
Storage Temperature	-4° to +122°F (-20° to +50°C)		
SAFETY			
Safety Rating	EN 61010-1, 600V Cat. IV², Pollution Degree 2		
Double Insulation	Yes		
CE Mark	Yes		

(1) *Crest Factor at 6500A = 1*

(2) *When used with SR193 or AmpFlex® probes. 600V Cat. III with MN193 or MR193 probes.*

Accuracy Specifications of the Current Probes (to be added to the meter's accuracy)

Sensor Type	TRMS Current	Maximum Error on I_{RMS}	Maximum Error on ϕ
MR193 1000A	[1A; 10A]	±(1.5%+1A)	N.S.
	[10A; 100A]		±(2°)
	[100A; 800A]	±(3%)	±(1.5°)
	[800A; 1200A]	±(5%)	
	[1200A; 1400A]		
SR193 1000A	[1A; 3A]	±(0.8%)	N.S.
	[3A; 10A]		±(1°)
	[10A; 100A]	±(0.3%)	±(0.5°)
	[100A; 1200A]	±(0.2%)	±(0.3°)
AmpFlex® 3000A	[10A; 100A]	±(3%)	±(1°)
	[100A; 6500A]	±(2%)	±(0.5°)
MiniFlex™ 1000A	[10A; 100A]	±(3%)	±(1°)
	[100A; 1000A]	±(2%)	±(0.5°)
MN93 200A	[0,5A; 2A]	±(3%+1A)	N.S.
	[2A; 10A]		±(6°)
	[10A; 100A]	±(2.5%+1A)	±(3°)
	[100A; 240A]	±(1%+1A)	±(2°)
MN193 100A	[100mA; 300mA]	±(0.7%+2mA)	N.S.
	[300mA; 1A]		±(1.5°)
	[1A; 120A]	±(0.7%)	±(0.7°
MN193 5A	[5mA; 50mA]	±(1%+0.1mA)	±(1.7°)
	[50mA; 500mA]	±(1%)	±(1°)
	[500mA; 6A]	±(0.7%)	
5A Adapter	[5mA; 50mA]	±(1%)	±(1°)
	[50mA; 6A]	±(0.5%)	±(0°)

TRANSCAT® Visit us at Transcat.com!
35 Vantage Point Drive // Rochester, NY 14624 // Call 1.800.800.5001